# Generative Adversarial Networks for Spatio-temporal Data: A Survey

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## Abstract

Generative Adversarial Networks (GANs) have shown remarkable success in producing realistic-looking images in the computer vision area. Recently, GAN-based techniques are shown to be promising for spatio-temporal-based applications such as trajectory prediction, events generation, and time-series data imputation. While several reviews for GANs in computer vision have been presented, no one has considered addressing the practical applications and challenges relevant to spatio-temporal data. In this article, we have conducted a comprehensive review of the recent developments of GANs for spatio-temporal data. We summarise the application of popular GAN architectures for spatio-temporal data and the common practices for evaluating the performance of spatio-temporal applications with GANs. Finally, we point out future research directions to benefit researchers in this area.